Development of AB-110: genetically-modified endothelial cells plus expanded cord blood hematopoietic stem cells as a transplantation therapy

Grant Award Details

Development of AB-110: genetically-modified endothelial cells plus expanded cord blood hematopoietic stem cells as a transplantation therapy

Grant Type: Late Stage Preclinical Projects

Grant Number: CLIN1-08342

Project Objective: Complete preclinical studies and file an IND.

Investigator:

Name:	Paul Finnegan
Institution:	Angiocrine Bioscience, Inc.
Type:	PI

Disease Focus: Blood Cancer, Cancer

Human Stem Cell Use: Other

Award Value: $3,797,117

Status: Closed

Progress Reports

Reporting Period: Operational Milestone #1

View Report

Reporting Period: Operational Milestone #2

View Report

Reporting Period: Operational Milestone #3

View Report

Grant Application Details

Application Title: Development of AB-110: genetically-modified endothelial cells plus expanded cord blood hematopoietic stem cells as a transplantation therapy

Public Abstract:

Therapeutic Candidate or Device

CD34+ Cord-Blood Derived Hematopoietic Stem and Progenitor Cells Co-Cultured and Co-Infused with Genetically Modified Endothelial Cells

Indication

Life-threatening high-risk hematologic malignancies including leukemia and lymphoma

Therapeutic Mechanism

Appropriately matched cord-blood derived stem and progenitor cells which has a significant population of both short- and long-term stem cells (expanded by genetically modified endothelial cells) rebuild the immune system after treatment called myeloablation (usually radiation and chemotherapy, also called conditioning) which destroys cancer in the blood system and bone marrow

Unmet Medical Need

For life threatening high risk blood cancer, cord blood stem and progenitor cell transplantation can be obtained rapidly and can provide a chance of cure; however, the cord blood units are small and have low cell dose, which prolongs recovery with a high chance for serious complications, even death.

Project Objective

Complete preclinical studies and file an IND

Major Proposed Activities

- Develop and validate the GMP process for manufacturing the AB-110 product in a closed system bioreactor
- Complete assessment of the safety of the E-CEL HUVEC component of AB-110 in both rodents and nonhuman primates as recommended by the US FDA
- Prepare and file an IND application to advance the product into clinical studies

Statement of Benefit to California: In California, blood cancers affect 19,000 patients per year with an annual mortality of 7,000 and health care costs of estimated $2.1 billion. We expect the development plan proposed in this grant will lead to a novel therapeutic approach that offers patients, in California, an effective, safe, and, importantly, curative option for the treatment of debilitating blood diseases such as leukemia and lymphoma, and potentially other serious genetic diseases affecting up to 6% of Californians.